OM SENI

Schottky Rectifier

20 A, 50 V Ultra−Low VF

FSV2050V

Features

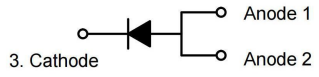
- Ultra Low Forward Voltage Drop
- Low Thermal Resistance
- Very Low Profile: Typical Height of 1.1 mm

- Non−DAP Option Only
- Qualified with Reflow (J−STD−020) and Solder Temperature 260°C Classification
- Lead Free in Compliance with EU RoHS 2011/65/EU Directive
- These Devices are Pb−Free, Halogen Free and are RoHS Compliant

Specifications

ABSOLUTE MAXIMUM RATINGS (T_A = 25°C unless otherwise noted)

Symbol	Parameter	Value	Unit
V_{RRM}	Peak Repetitive Reverse Voltage	50	V
V_{RWM}	Working Peak Reverse Voltage	50	V
V_{RMS}	RMS Reverse Voltage	35	V
V_R	DC Blocking Voltage	50	V
$I_{F(AV)}$	Average Rectified Peak Forward Surge Current	20	A
I_{FSM}	Non−Repetitive Peak Forward Surge Current	320	A
T_J	Operating Junction Temperature Range	−55 to +150	°C
T_{STG}	Storage Temperature Range	−55 to +150	°C



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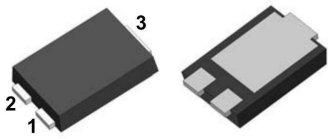
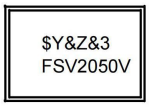


TO−277−3LD
CASE 340BQ

MARKING DIAGRAM



$Y = OM SENI
&Z = Assembly Plant Code
&3 = Date Code (Year & Week)
FSV2050V = Specific Device Code

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FSV2050V

THERMAL CHARACTERISTICS (T_A = 25°C unless otherwise noted) (Note 1)

Symbol	Characteristic	Minimum Land Pattern	Maximum Land Pattern	Unit
$R_{\theta JA}$	Junction−to−Ambient Thermal Resistance	100	40	°C/W
Ψ_{JL}	Junction−to−Lead Thermal Characteristics, Thermocouple Soldered to Anode	15	12	°C/W
	Junction−to−Lead Thermal Characteristics, Thermocouple Soldered to Cathode	6	5	

1. The thermal resistances ($R_{\theta JA}$ & Ψ_{JL}) are characterized with device mounted on the following FR4 printed circuit boards, as shown in Figure 1 and Figure 2. PCB size: 76.2 x 114.3 mm. Minimum land pattern size: 4.9 x 4.8 mm (big pattern, x1), 1.4 x 1.52 mm (small pattern, x2). Maximum land pattern size: 30 x 30 mm (pattern, x2). Force line trace size = 55 mils, sense line trace size = 4 mils.



Figure 1. Minimum Land Pattern of 2 oz Copper

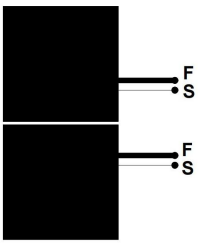

Figure 2. Maximum Land Pattern of 2 oz Copper

ELECTRICAL CHARACTERISTICS (T_A = 25°C unless otherwise noted)

Symbol	Parameter	Conditions	Min	Typ	Max	Unit
BV_R	Breakdown Voltage	I_R = 500 μA	50	55.3	−	V
V_F	Forward Voltage Drop	I_F = 20 A	−	485	550	mV
I_R	Reverse Current	V_R = 50 V	−	60.3	320	μA

Product parametric performance is indicated in the Electrical Characteristics for the listed test conditions, unless otherwise noted. Product performance may not be indicated by the Electrical Characteristics if operated under different conditions.

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TYPICAL PERFORMANCE CHARACTERISTICS

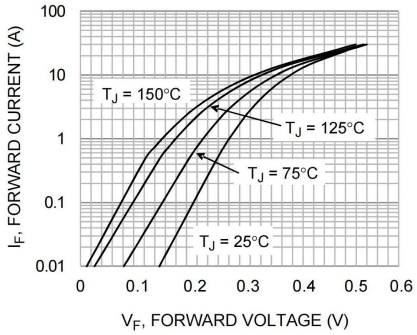

Figure 3. Typical Forward Characteristics

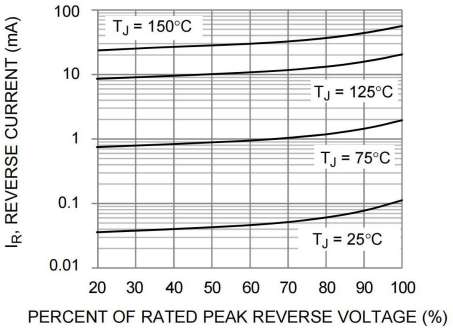

Figure 4. Typical Reverse Characteristics

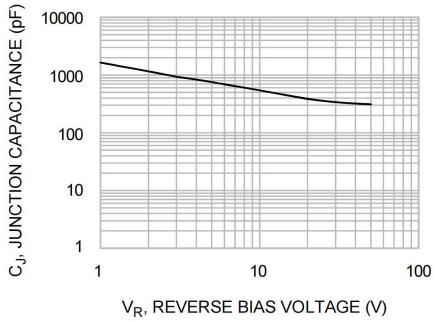

Figure 5. Typical Junction Capacitance

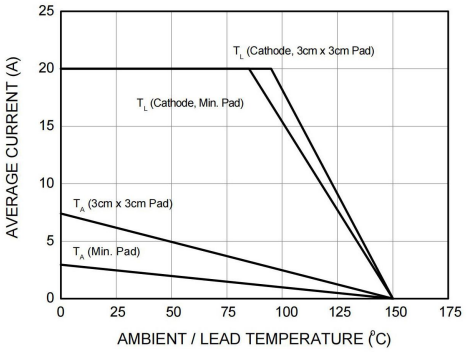

Figure 6. Forward Current Derating Curve

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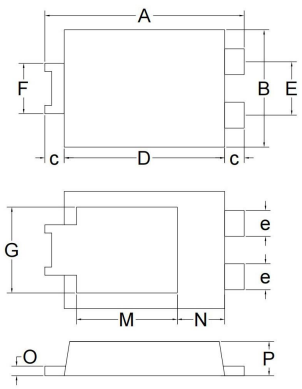
Ordering Information

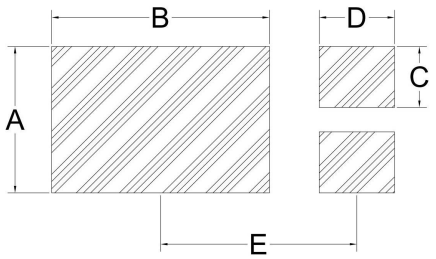
PACKAGE	PACKAGE CODE	UNIT WEIGHT(g)	REEL(pcs)	BOX(pcs)	CARTON(pcs)	DELIVERY MODE
TO-277	R3	0.090	5000	10000	100000	13''

Package Outline Dimensions (TO-277)



Symbol	Dimensions			
	Millimeters		Inches	
	Min.	Max.	Min.	Max.
A	6.300	6.700	0.248	0.264
B	3.950	4.300	0.156	0.169
c	0.410	0.710	0.016	0.028
D	5.280	5.880	0.208	0.231
E	1.760	1.960	0.069	0.077
e	0.850	0.960	0.033	0.038
F	1.750	1.850	0.069	0.073
G	2.850	3.150	0.112	0.124
M	3.390	3.690	0.133	0.145
N	1.440	1.740	0.057	0.069
O	0.250	0.350	0.010	0.014
P	0.950	1.250	0.037	0.049

Suggested Pad Layout



Symbol	Dimensions			
	Millimeters		Inches	
	Min.	Max.	Min.	Max.
A	3.400	3.800	0.134	0.150
B	4.500	4.900	0.177	0.193
C	1.200	1.600	0.047	0.063
D	0.600	1.00	0.024	0.039
E	3.670	4.070	0.144	0.160